

Well Construction Details and Log of Boring RIPZ-16

Final Remedial Investigation Report
Casmalia Resources Superfund Site
Casmalia, California

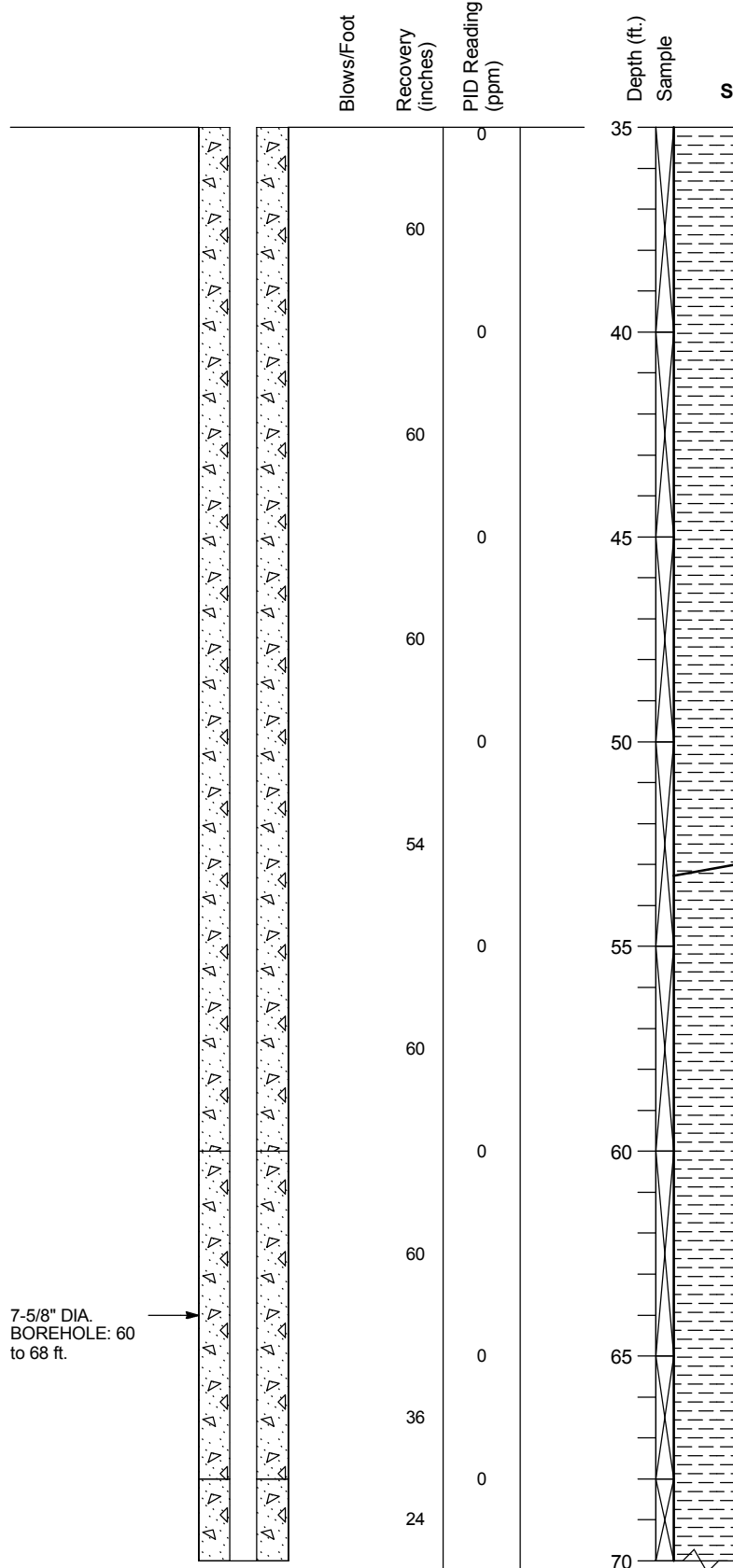
PLATE

E9-27

DRAWN	JOB NUMBER	CHECKED	CHK'D DATE	APPROVED	APPR'D DATE
CN	4088097619	WJF	1/11	WBC	1/11

Well Construction Details

Date 12/3/04
 Driller Air Rotary
 Drilling Method ARCH
 Sampler Continuous Core
 Hammer Weight NA Drop NA
 Logged by Datum
 Surface Elevation 622.79 Hole Dia. 9 5/8 in.
 Northing 506312.895 Easting 1236459.512



@ 35 ft.: Moderately fractured, moderately weathered, abundant oxide staining along joints and fractures

@ 36.2 ft.: Small subhorizontal fractures
 @ 36.7 - 40.8 ft.: Subangular fractures

@ 40 ft.: Intensely fractured, oxidized; alternates between Light Olive Gray and Olive Gray (5Y 5/2)
 @ 40.1 and 41 ft.: Fractures

@ 42.3 and 42.7 ft.: Subhorizontal fractures
 @ 43 ft.: Gypsum coating subangular fracture

@ 46 ft.: Gypsum, some fractures have no oxidation staining

Dark Gray Unweathered Mudstone (5Y 4/1), Moderately consolidated, massive, very little fracturing, low hardness, weak, little to no weathering

@ 68.1 ft.: Four small subhorizontal fractures, two upper fractures with iron oxide

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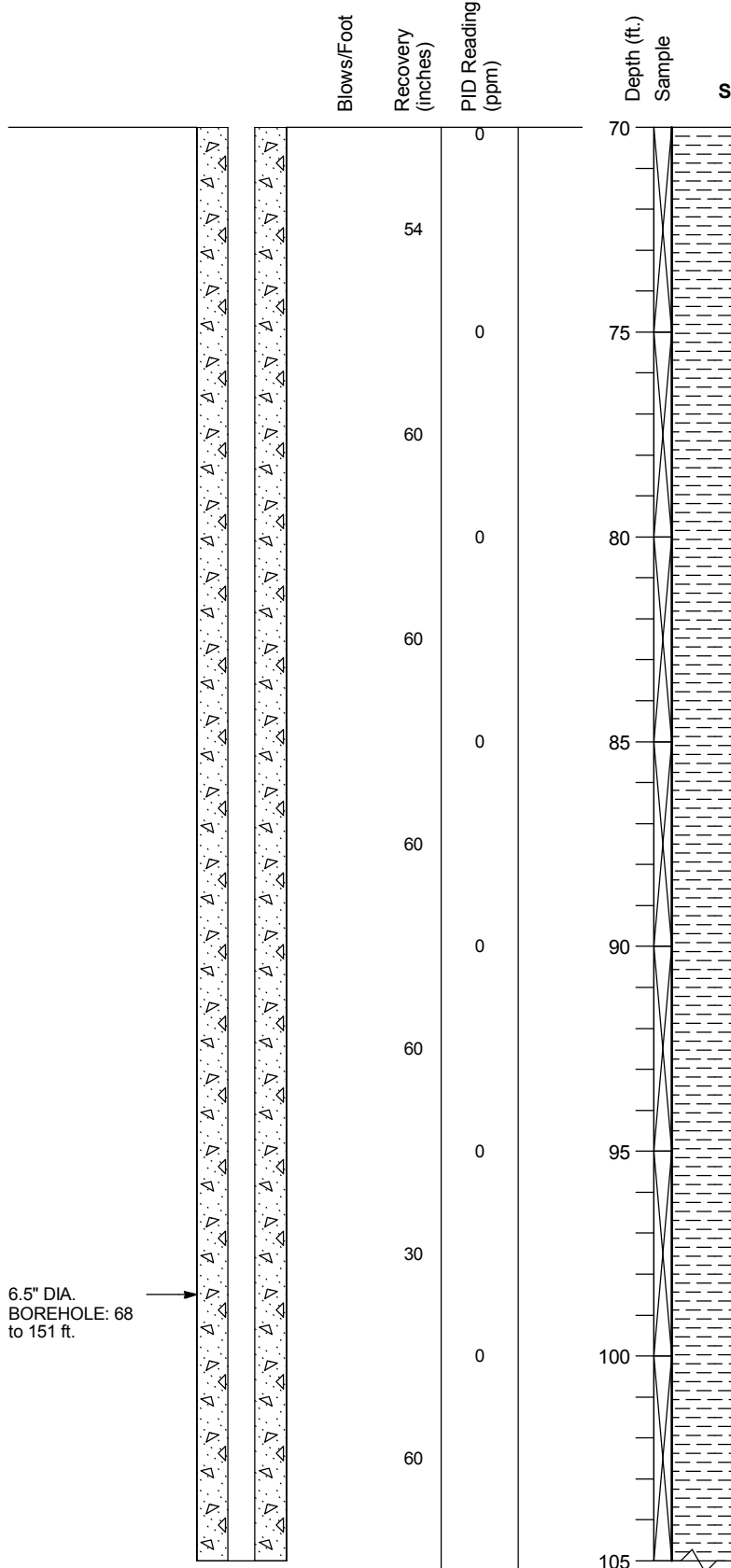
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@ 78.2 ft.: One small subhorizontal fracture, no oxides

@ 79.7 and 80.5 ft.: Video survey shows white layers

@ 81 ft.: Massive, unfractured

@ 84.4 ft.: White layer

@ 90, 92, and 93 ft.: White layers

@ 102 ft.: White zone shown in optical televiewer survey, 101 shown in video survey

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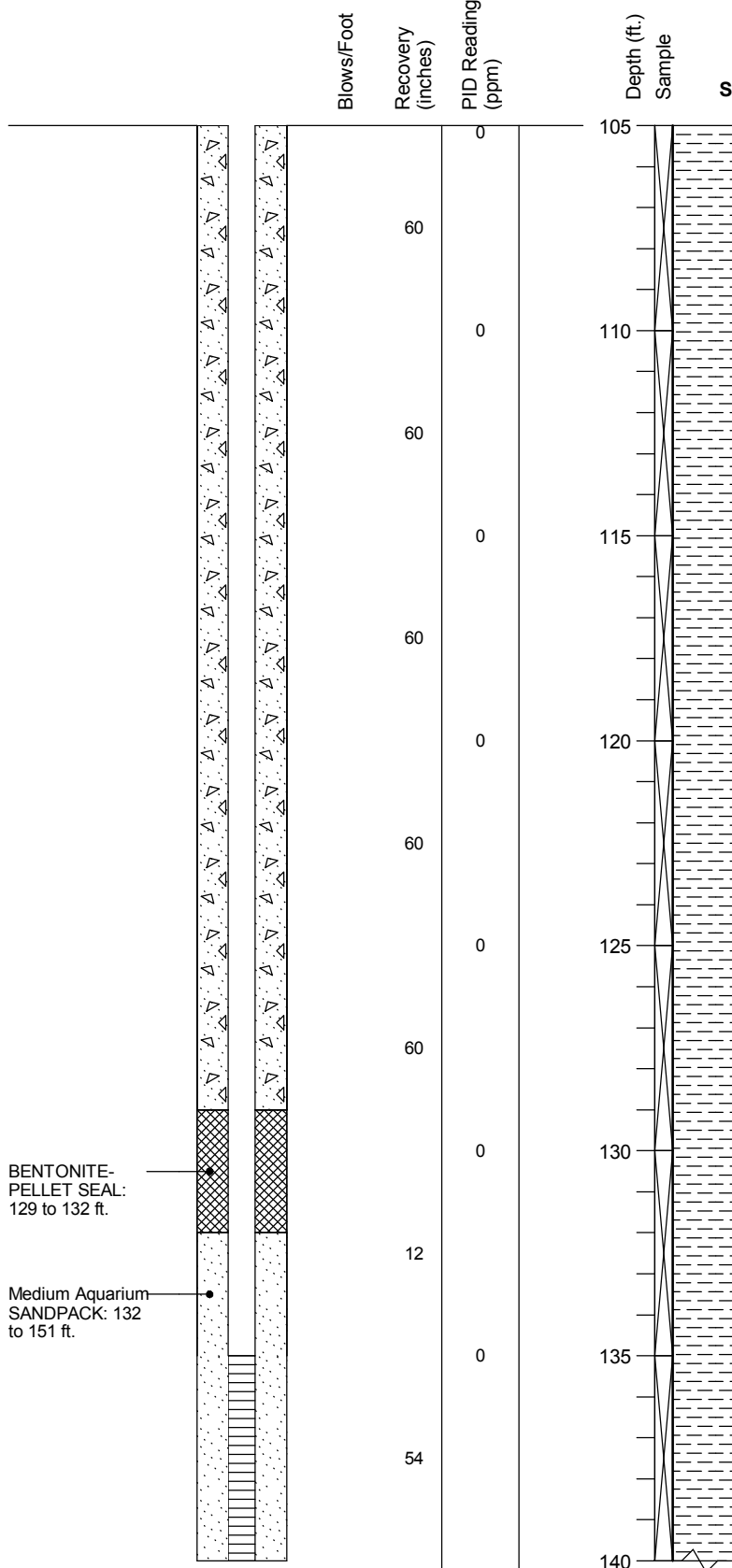
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@ 106 ft.: Massive, unfractured

@ 110.8, 111.6, 114.8, 115.8, and 117.8 ft.: Small subhorizontal oxides

@ 114.5 ft.: White zone

@ 118 ft.: Video survey shows white layer; water seen running down borehole sidewall from above

@ 118.8 ft.: Small minor poorly-developed vertical fracture, some white oxide

@ 120.5 ft.: Harder drilling, rock is moderately strong from 120.5 - 124 ft.; small subhorizontal and subangular fractures from 120.9 to 124.2 ft.

@ 128 ft.: Video survey shows vertical fracture

@ 130 ft.: Optical televiewer shows white layer

@ 134 ft.: Video survey shows subhorizontal fracture

@ 137 ft.: Video survey shows high angle fracture with water cascading out

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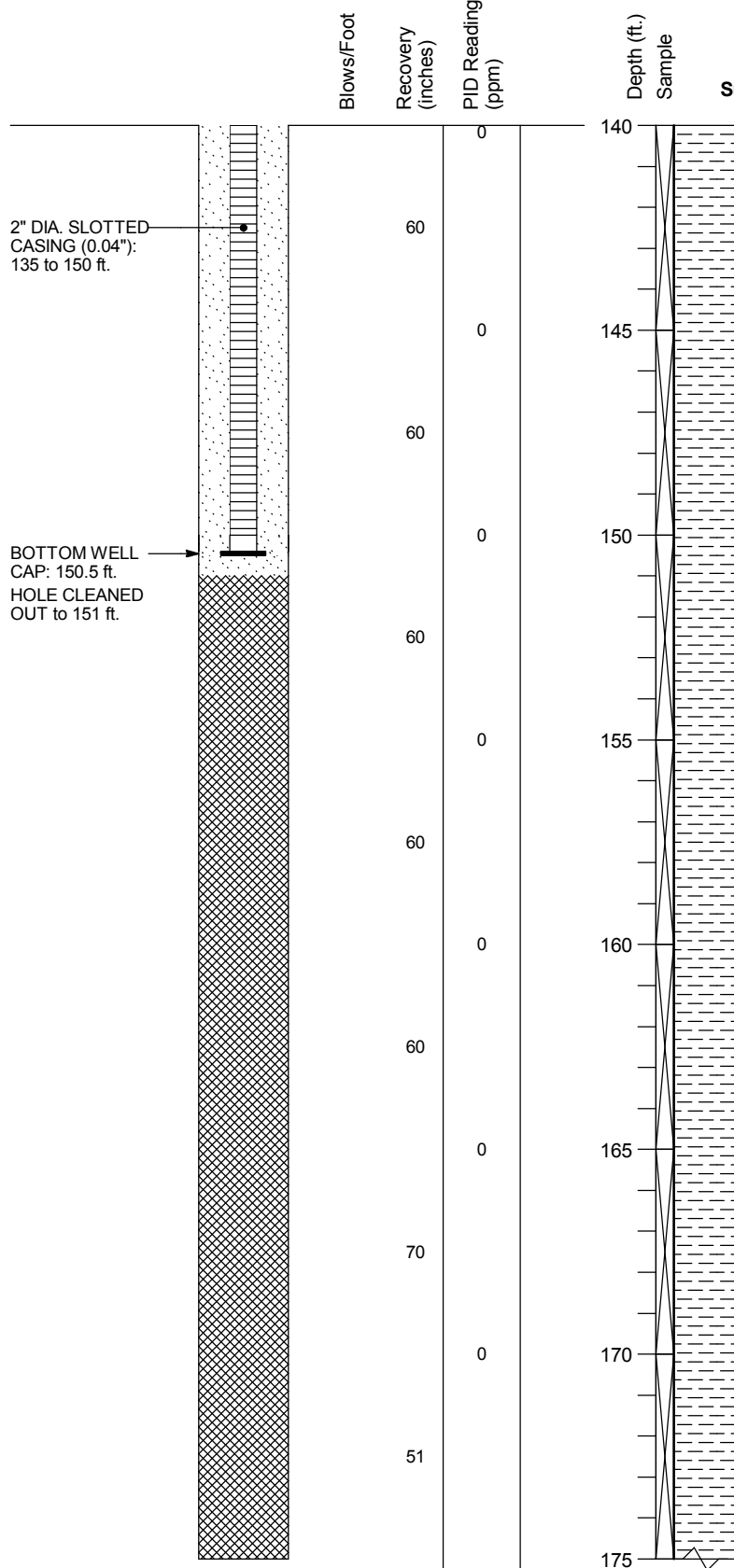
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@ 141.4 ft.: Subhorizontal fracture; some slight iron oxide staining from 141.4 - 145.1 ft.

@ 146.6 ft.: Subangular fractures from 146.6 - 151 ft.

From 153.1 - 154.2 ft.: Subhorizontal fractures

@ 154.5 - 155.5 ft.: White zone; subhorizontal fractures at 155.8, 158.2, 158.5, 158.8, 160.2, 161.8, and 162.2 ft.

@ 163.6 ft.: Subhorizontal fractures

@ 165.3 - 172 ft.: Subhorizontal fractures

@ 167 ft.: Video survey shows high angle fracture

@ 171 ft.: Video survey shows 20° off horizontal fracture
 Vertical fractures from 172 - 173 ft., 172 - 172.5 ft., 175 - 176 ft., 174.8 - 175.2, and 175.4 - 176; some white oxides

@ 173 ft.: Video survey shows fracture emitting water with suspended solids

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BORING_WELL2_CASMALIRIFS.GPJ GEOL.GDT 12/13/10

Well Construction Details

BENTONITE-
PELLET
BACKFILL: 151 to
200 ft.

Blows/Foot

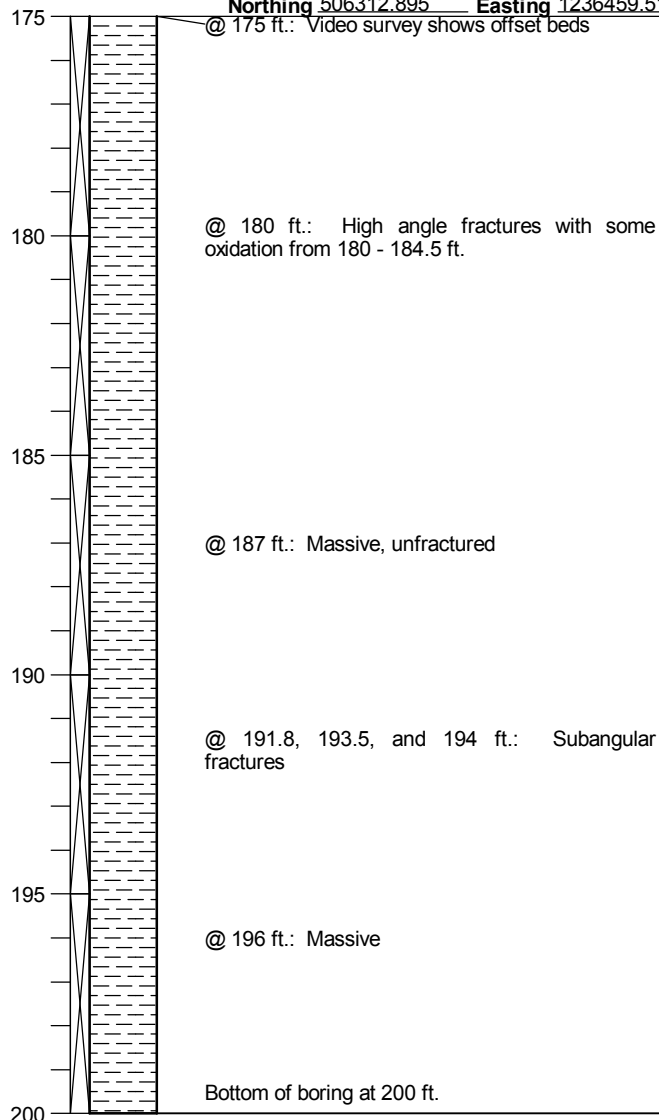
Recovery
(inches)

PID Reading
(ppm)

Depth (ft.)

Sample

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